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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/932,531	08/17/2001	Douglas W. Akers	B-124	4276

7590 03/19/2002

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EXAMINER
PALABRICA, RICARDO J

ART UNIT	PAPER NUMBER
3641	

DATE MAILED: 03/19/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/932,531	AKERS	
	Examiner	Art Unit	
	Rick Palabrica	3641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 January 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3 and 5-8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3 and 5-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2 . NP
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

1. Applicant's election without traverse of Group I (apparatus for non-destructive testing) in Paper No. 4 is acknowledged. Said election is in response to Office Action dated 1/18/2002.

2. Examiner agrees with the applicant that claims 1 and 8 are generic claims that are not limited to a specific photon source. Accordingly, the statement in said Office Action that there is no generic claim is withdrawn for the elected invention.

Specification

3. The disclosure is objected to because of the following informalities:

- On page 1, paragraph 0002, line 3, the word "position" should be replace with "positron."
- On page 2, paragraph 0005, line 4, the word, "loose" should be replace with "lose."

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-3 and 6-8 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 5,175,756 to Pongratz et al (see Fig. 1 and corresponding parts of the specification). Pongratz discloses a device for detecting nitrogenous, phosphoric, chloric and/or oxygenous substances inside an object, particularly of explosives or addictive substances in pieces of luggage. He discloses an electron accelerator (1) of variable energy that generates an electron beam (2) impinging on a heavy metal target (3), creating bremsstrahlung photons (4) to scan a test object. Said photons cause creation of positron emitters in said object if it contains substances such as nitrogen, chlorine or phosphorus (see column 3, lines 30-33). The detector is an Anger camera that is essentially a position-resolving detector system for the annihilation radiation occurring from positron annihilation. On the basis of coincidence measurements, a list of coincidence events is established which is converted in the computer (11) into a density distribution of the detected substance (see column 4, 2nd to last paragraph). The computer (11) controls the electron accelerator (1) to adjust the energy of the bremsstrahlung photons (see column 3, lines 25-28).

5. Claims 1-3, 5 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 4,756,866 to Alvarez, who discloses a non-destructive method for detecting explosives concealed in luggage. Said claims read on Alvarez' Fig. 1 and corresponding parts of his specification. Alvarez discloses a scanning apparatus comprising a source of bremsstrahlung photons comprising a microtron electron accelerator (M) with an RF cavity (14) generating electrons. Said electrons are directed at tungsten target (T) and the resulting pencil beam of 35-40 MeV x-rays (photons) are directed towards the specimen being tested, i.e., luggage (L). ^{14}N in the explosive (E) within the luggage interact with the x-rays to produce ^{12}N that eventually decays by positron emission. The positron stops and annihilates, producing as signature a pair of back-to-back 511 keV gammas (R) – see column 3, 1st and 2nd full paragraphs. Detectors (S) placed on each side of the test specimen detect said annihilation gammas. In his claim 11, Alvarez discloses that solid-state detectors are used and said detectors include the germanium detector in the applicant's claim 5.

6. Claims 1-3, 6 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 4,980,901 to Miller, who discloses an apparatus for detecting common explosive materials (see Fig. 5 and corresponding parts of the specification). A source of electrons (54) is directed to a bremsstrahlung converter target (60). X-rays produced by said converter target is directed to the suitcase (50). The resultant production of annihilation photons from the nitrogen atoms in the suitcase is detected by scintillation

counters (66), and the signals from these counters are processed by a minicomputer (68) to provide an indication of the concentration of nitrogen in the suitcase (see column 5, 3rd paragraph). An accelerator is one possible source of the electrons (see column 2, lines 39-41).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as obvious over Alvarez. As noted in Section 5 above, Alvarez discloses the applicant's inventive concept. However, Alvarez does not disclose a data processing system operatively associated with his detectors. The use of an automatic data processing system to process data and to perform a desired function is well known in the art (see, for example, U.S. Patent 5,037,602 to Dabiri et al.). The applicant himself cites several commercially available data acquisition systems that can be used for the claimed apparatus (see page 18 of specification). Therefore, it would have been obvious to one having ordinary skill of the art at the time the invention was made to include in the apparatus, as disclosed by Alvarez, a data acquisition system to produce automatic data indicative of the test specimen characteristic and to operatively associate said system to the photon source,

in order to have the advantages of faster data acquisition and enhanced control of the photon source. Such modification is no more than the utilization of conventionally known designs/techniques of automation and control in the nuclear art.

8. Claims 5 and 7 are rejected under 35 U.S.C. 103(a) as obvious over Miller. As noted in Section 6 above, Miller discloses the applicant's inventive concept. However, Miller uses a scintillation detector instead of a germanium detector and he does not disclose a data processing system operatively associated with said detector. The use of an automatic data processing system to process data and to perform a desired function is well known in the art (see, for example, U.S. Patent 5,037,602 to Dabiri et al.). Also, the use of a semiconductor detector such as a germanium detector to substitute for a scintillation detector is well known in the nuclear instrumentation art. Therefore, it would have been obvious to one having ordinary skill of the art at the time the invention was made to modify the apparatus, as disclosed by Miller, to substitute a germanium detector for the scintillation detector and to add a data processing system operatively associated with the photon source, in order to have an alternative detector type and the advantage of enhanced control of the photon source. Such modification is no more than the utilization of conventionally known designs/techniques of instrumentation and control in the nuclear art.

9. Claims 5 rejected under 35 U.S.C. 103(a) as obvious over Pongratz et al. As noted in Section 4 above, Pongratz discloses the applicant's inventive concept. However, Pongratz uses an Anger camera which is a gamma camera using NaI scintillating materials. The use of germanium gamma-ray cameras is well known in the nuclear art to offer better energy resolution than the Anger camera (see, for example, U.S. patent 3,803,416 to Strauss). Therefore, it would have been obvious to one having ordinary skill of the art at the time the invention was made to modify the apparatus, as disclosed by Pongratz, to substitute a germanium gamma camera for the Anger camera in order to gain the advantage of better resolution. Such modification is no more than the utilization of conventionally known designs/techniques of radiation detection in the nuclear art.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. References D-G pertain to non-destructive testing using positron emission and are related to the claimed invention.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rick Palabrica whose telephone number is 703-306-5756. The examiner can normally be reached on 8:00-4:30, Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Carone can be reached on 703-306-4198. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-0285 for regular communications and 703-305-0285 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

RJP
March 12, 2002

MICHAEL J. CARONE
SUPERVISORY PATENT EXAMINER